

Flint Mine Solar

Case No. 18-F-0087

1001.27 Exhibit 27

Socioeconomic Effects

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EXHIBIT 27 SOCIOECONOMIC EFFECTS

On behalf of Flint Mine Solar, LLC (the Applicant), Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services D.P.C (EDR) has conducted a socioeconomic analysis that quantifies the potential countywide and statewide socioeconomic impacts of the Facility based on the current socioeconomic conditions of the area. The Facility is located within the Towns of Coxsackie and Athens, Greene County, New York.

This Exhibit assesses the potential socioeconomic effects of this Facility on the host communities of the Towns of Coxsackie and Athens, Greene County, and New York State (the Study Area). It reviews relevant conditions throughout the area and interprets trends and patterns of change as represented by several demographic and economic indicators. Potential statewide and countywide impacts from the Facility are then assessed considering the current socioeconomic conditions of the area.

Development, construction, and operation of a solar PV facility bring significant benefits to the host community, surrounding region and state. One major difference between a fossil (or nuclear) power generating facility and a renewable energy facility is that in the case of the former, the fuel is captured locally. The result of this is that a significant amount of the economic benefit of such a facility accrues to the landowners, many of whom are stalwarts of the community and reinvest the receipts from renewable energy locally or regionally. In the case of the Facility, the Applicant will purchase as much as 90% of the land directly from current landowners ahead of construction, immediately infusing almost \$15 million directly into the local economy. This financial benefit is welcomed by the Facility landowners. As discussed in Appendix 4-A, the land in the Project Area is ill-suited to agriculture, and the infrastructure to support family farms no longer exists in the area. As a result, the Facility provides to local landowners, the taxing jurisdictions, and businesses in Coxsackie and Athens the opportunity to utilize their land resources in a financially beneficial while sustainable manner.

Other elements of generating clean renewable energy from the Facility involve the construction and operation of the Facility, which will have positive impacts throughout the local and statewide economy. Businesses involved in on-site Facility construction and operations, as well as those throughout the industrial supply chain, are expected to see a measurable increase in the demand for their services. In addition, the earnings by workers during construction and operation of the Facility are expected to generate additional spending, creating a "ripple effect" throughout the countywide and statewide economy. Using the JEDI model established by the National Renewable Energy Laboratory (NREL), it is estimated that Facility construction could increase onsite and off-site employment by 490 to 676 workers statewide with total earnings of approximately \$41.3 to \$59.4 million (see Tables 27-12). The operation and maintenance of the installed Facility is estimated to increase onsite and off-site employment demand by an additional

11 to 17 workers statewide annually with total annual earnings of approximately \$1.0 to \$1.6 million. In addition to jobs and earnings, the construction and operation of the Facility is expected to have a positive impact on statewide economic output, a measure of the value of goods and services produced and sold by backward-linked industries. The value of statewide economic output associated with the Facility is estimated at \$67.9 to \$102.0 million during Facility construction and \$2.3 to \$3.6 million annually during operation. There will also be job and economic development benefits for Green County. Countywide economic benefits (in terms of jobs, earnings, and economic output) are presented in Table 27-13. Given the economic disruption currently underway at the time of submission of this Application due to COVID-19, such work may be especially welcomed once construction begins in 2021-2022.

Information regarding population, educational attainment and economic conditions within the Study Area is summarized in the Socioeconomic Profile. The Methodology for Jobs and Economic Impact Analysis section features information regarding the JEDI model and its use in this analysis. Finally, the Summary Results for the Jobs and Economic Impact Analysis section features the results of the JEDI model along with other information pertinent to the Stipulations for this Exhibit.

Socioeconomic Profile

Table 27-1. Demographic Information

	Town of Coxsackie	Town of Athens	Greene County	New York
Population				
2018 ACS 5-Year Population Estimate ¹	8,540	3,941	47,617	19,618,453
% Annual Change (2010-2018)	-0.6%	-0.5%	-0.5%	0.3%
% of population ages 16-64	74.2%	62.8%	65.2%	66.8%
Educational Attainment				
% high school graduate or higher	75.9%	90.1%	87.2%	86.5%
% bachelor's degree or higher	15.8%	18.9%	22.1%	35.9%
Economic Conditions				
Median Housing Value	\$168,300	\$182,300	\$174,700	\$302,000
Median household Income	\$67,401	\$56,550	\$53,615	\$65,323
Individuals below poverty	7.8%	13.1%	13.3%	14.6%
Labor Force Characteristics				
Unemployment Rate	3.5%	5.0%	4.6%	6.0%
Labor Force Participation Rate	39.8%²	54.6%	52.5%	63.1%

Source: 2014-2018 American Community Survey 5-Year Estimates, Decennial census

Greene County is in the Capital Region and features the foothills of the Catskill Mountains and portions of the Hudson River Valley. Both the Town of Coxsackie and the Town of Athens are located along the western shoreline of the Hudson River, with the Town of Athens to the south of the Town of Coxsackie. Population rates in the Towns of Athens and Coxsackie and Greene County have remained relatively stable over the past eight years, decreasing slightly compared with an overall statewide increase in population. The educational attainment for high school graduates in Greene County and the Town of Athens is relatively consistent to that of New York State, while the attainment of bachelor's degrees is lower for all local jurisdictions than New York State. Local housing values are lower compared to New York State, as are the percent of individuals below poverty level (7.8%, 13.1% and 13.3%, respectively, for the Town of Coxsackie, Town of Athens, and Greene County compared to 14.6% for New York State).

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¹ Represents total population, including individuals in institutional group quarters, which include correctional facilities, nursing homes, and/or mental hospitals. See Exhibit 28 for discussion of the Coxsackie Correctional Facility and the NYS DOC Greene Correctional Facility, which is in the Town of Coxsackie. Greene County has a total 3,290 individuals in institutional group quarters. The Town of Coxsackie accounts for 2,596 of those persons, or 78.9% of those in the whole county.

² Unusually low unemployment rates and labor force participation for Town of Coxsackie may be attributed to the inclusion of the 2,596 persons in institutional group quarters.

Table 27-2. Total Employment in New York and Greene County

North American Industry Classification System (NAICS) Code Description	N	Total full-time and part-time employment by NAICS industry in New York (average annual number of jobs)				full-time a nent by NA Greene Cor e annual n	NCS indus unty, NY	stry in
	2015	2016	2017	2018	2015	2016	2017	2018
Health Care and Social Assistance	1,541,464	1,572,537	1,615,622	1,662,300	1,046	1,112	1,061	1,116
Retail Trade	912,356	926,290	906,840	917,968	1,949	1,957	1,807	2,000
Educational Services	952,522	976,149	978,139	953,489	1,210	1,544	1,534	1,134
Accommodation and Food Services	713,788	741,190	747,204	776,558	1,244	1,272	1,415	1,711
Professional, Scientific, and Technical Services	655,801	674,740	678,745	674,703	290	270	267	251
Finance and Insurance	515,692	516,105	516,480	508,815	311	330	316	290
Public Administration	477,693	463,428	477,896	525,917	2,691	2,760	2,794	2,431
Manufacturing	456,750	452,007	448,115	440,089	882	875	745	688
Administrative and Support and Waste Management and Remediation Services	468,255	494,031	519,534	530,412	271	281	302	270
Other Services (except Public Administration)	360,357	372,823	376,886	369,205	426	412	452	428
Wholesale Trade	343,727	342,127	341,675	329,476	1,044	778	786	1,026
Construction	350,707	379,249	386,373	392,390	510	508	489	488
Transportation and Warehousing	314,554	324,728	328,567	328,433	486	517	525	534
Information	287,910	280,939	283,889	308,061	236	233	216	235
Real Estate and Rental and Leasing	202,088	208,430	205,968	205,624	151	137	104	107
Arts, Entertainment, and Recreation	173,266	178,678	178,429	185,688	882	536	772	913
Management of Companies and Enterprises	150,068	152,776	152,310	148,504	41	50	38	43
Utilities	43,229	42,209	43,507	42,460	36	82	84	84
Agriculture, Forestry, Fishing and Hunting	23,685	24,421	24,760	27,214	73	78	87	84
Mining, Quarrying, and Oil and Gas Extraction	4,608	4,543	4,324	4,698	3	1	1	0

Source: US Census Bureau Quarterly Workforce Indicators, 2018

While Health Care and Social Assistance, Retail Trade, and Accommodation and Food Services are dominant sectors in both Greene County and New York State, Greene County is distinguished by its robust Public Administration and Educational Services sectors. In both New York State and Greene County, Retail Trade is amongst the top three employment sectors. In decreasing order, the top five employment sectors in New York State are 1) Health Care and

Social Assistance, 2) Educational Services 3) Retail Trade, 4) Accommodation and Food Services, and 5) Professional, Scientific, and Technical Services (US Census Quarterly Workforce Indicators, 2018). This compares with the five dominant employment sectors in Greene County, which are 1) Public Administration, 2) Retail Trade, 3) Accommodation and Food Services, 4) Educational Services, and 5) Healthcare and Social Assistance (US Census Quarterly Workforce Indicators, 2018).

Greene County has 34,979 acres of total farmland, which accounts for 8.4% of the County's total land area. In comparison, approximately 23% of land in New York State is farmland. (New York State Comptroller, 2019a). There are about 206 farm operations in Greene County, which collectively create 299 jobs within the County (USDA NASS, 2017).

Overall employment in the Capital Region of New York, which includes the Facility Site, is projected to grow at a slightly lower rate than New York State; growth is projected to be 11.2% for the Capitol Region and 12% for New York State from 2016 through 2026 (NYSDOL, 2016). This increase will be concentrated differently across industrial sectors. The top five fastest growing sectors forecasted for the Capitol Region include Healthcare Support Occupations, Architecture and Engineering Occupations, Healthcare Practitioners and Technical Occupations, Personal Care and Service Occupations, and Community and Social Service Occupations (NYSDOL, 2016).

Understanding the fiscal profile of communities in which a project will be located is essential to assessing the potential economic impacts or benefits of that project. The general fiscal profile for any municipality includes its revenues, expenditures, and long-term debt obligations. Most of the revenue collected by local governments in New York is from real property taxes, sales taxes, and state aid. Municipalities (towns, villages, and counties) and school districts, as independent taxing jurisdictions, are responsible for providing specific services and facilities to those who live and work within their boundaries and for levying the taxes needed to pay for those services/facilities. In assessing the economic impact of the Facility, it is informative to review local property tax levies and tax rates for each affected taxing jurisdiction, as municipalities have the most direct control over these revenue sources. The taxing jurisdictions and special taxing districts (e.g., fire and library districts) affected by the Facility include Greene County, Town of Athens and Coxsackie, Coxsackie-Athens Central School District, West Athens-Limestreet Fire Company, Coxsackie Hose #3 Fire Company, Coxsackie Library, and Athens Library.

Annual municipal expenditures are recovered in large part through each municipality's tax levy, which is borne by taxable properties. In general, real property taxes, unless tax exempt or subject to a Payment in Lieu of Taxes (PILOT) are determined by each property's assessed value, multiplied by the tax rate established by each taxing jurisdiction.

Table 27-3 summarizes the most recent data available for municipal and county property tax levies and rates in the County and affected Towns.

Table 27-3. Property Tax Levy and Municipal Tax Rate

	Levy year 2019 (roll year 2018) ³			Levy year 2018 (roll year 2017)			
	Property Tax Rate per E Tax Levy \$1000 Full Value		Eq. Rate	Property Tax Levy	Tax Rate per \$1000 Full Value	Eq. Rate	
Town of Coxsackie	\$2,037,572	3.86	71.25	\$2,041,711	4.20	74.0	
Town of Athens	\$778,162	1.52	100	\$778,162	1.53	100	
Greene County	\$27,016,491	4.62	76.59	\$26,760,554	4.70	78.05	

Source: New York State Office of Real Property Tax Services

An overview of the balance of a municipality's revenues, expenditures, and indebtedness reveals its general fiscal health. As illustrated in Table 27-4, from 2017 to 2018, the Towns of Coxsackie and Athens both experienced revenue decreases, while Greene County had its revenues increase. During the same time period, the Town of Coxsackie and Greene County both had an increase in their expenditures, while the Town of Athens' expenditures slightly decreased. Coxsackie has been faced with the need to purchase expensive new fire trucks and equipment, as well as a new ambulance, while Athens has been considering a major investment in its Town Hall facilities. To date, however, the Town of Athens had relatively stable debt levels from 2017 to 2018, whereas the Town of Coxsackie and Greene County experienced an increase in their debt levels (New York State Comptroller, 2019b). It is noted in 2018 the Town of Coxsackie experienced a significant increase in its total indebtedness and its total expenditures and other uses while bringing in les in total revenues and other sources. (The increased indebtedness and expenditures are likely due to the recent construction of a new town hall and barn.) While cutting expenditures is one avenue towards a balanced fiscal budget and decreasing debt, it is beneficial to combine this with a strategy to increase local revenues. Over the past couple of years, for example, Athens has been looking to conduct a review of property assessments, especially commercial property, to make sure that the Town's finances are properly supported.

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³ Property tax levy reflects the amount of revenue required by the municipality through the property tax base and is equal to total municipal spending minus aid and other revenues. Tax base is equal to the sum of taxable parcel values. Municipal tax rate is determined by dividing the levy by the tax base, such that each taxable parcel produces that amount of property tax per \$1,000 assessed value. For a \$100,000 property in the Town of Coxsackie, property tax liability = (4.20 / 1000) * 100,000, or \$420. An equalization rate is the state's measurement of a municipality's level of assessment (LOA). An equalization rate of 100 means that the municipality is assessing property at 100 percent of market value. An equalization rate lower than 100 means that the municipality's total market value is greater than its assessed value.

Table 27-4. Municipal Budgets

	2017	2018			
	Town of Coxsackie				
Total Revenues & other sources	\$3,965,504	\$3,520,783			
Total Expenditures & other uses	\$3,626,551	\$5,877,919			
Total Indebtedness	\$336,163	\$3,530,675			
	Town of Athens				
Total Revenues & other sources	\$3,578,527	\$2,111,942			
Total Expenditures & other uses	\$4,085,344	\$2,911,717			
Total Indebtedness	\$800,000	\$755,743			
	Greei	ne County			
Total Revenue & other sources	\$122,758,650	\$130,250,084			
Total Expenditures & other Sources	\$114,342,787	\$118,812,830			
Total Indebtedness	\$13,696,154	\$17,018,259			

Source: New York State Comptroller, 2019b

School districts in New York are subject to a separate budgeting process. The school district servicing the Facility Area is Coxsackie-Athens Central School District. The budget for this school district is shown in Table 27-5. Coxsackie-Athens Central School District experienced a revenue increase and a significant increase in expenditures from 2017 to 2018. During that same period, Coxsackie-Athens School District also increased their debt (New York State Comptroller, 2019b).

Table 27-5. School District Budget

	2017	2018			
	Coxsackie – Athens Central School District				
Total Revenues & other sources	\$29,804,961	\$31,288,874			
Total Expenditures & other uses	\$31,535,398	\$40,892,058			
Total Indebtedness	\$17,270,000	\$18,346,000			

Source: New York State Comptroller, 2019b

In the face of budget shortfalls and a statewide property tax cap, taxing jurisdictions may find it advantageous to maximize other, less traditional forms of revenue. The proposed Facility is anticipated to have direct benefits to local taxing jurisdictions through PILOT and Host Community Agreement (HCA) payments, along with other local, regional, and statewide economic benefits.

Methodology for Jobs and Economic Impact Analysis

Solar power development, like other commercial development projects, can expand local, regional, and statewide economies through both direct and indirect means. Income generated from direct employment during the construction and operation phases of a solar energy generating facility is used to purchase local goods and services, creating a ripple effect throughout the state. The potential employment and economic impacts of the Facility were assessed using the Job and Economic Development Impact (JEDI) photovoltaics model (version PV12.23.16). The JEDI model was created by the National Renewable Energy Laboratory—a government-owned, contractor-operated laboratory funded by the U.S. Department of Energy—to assess the economic impacts of proposed solar energy generating facilities during both the construction and operation phases (USDOE NREL, 2017). This model allows users to estimate jobs, earnings, and economic output by impact level (described below) using facility-specific data provided by the applicant and geographically defined multipliers. These multipliers are produced by IMPLAN Group, LLC using a software/database system called IMPLAN (IMpact analysis for PLANning), a widely-used and widely-accepted general input-output modeling software and data system that tracks each unique industry group in every level of the regional data (IMPLAN Group, 2019). The 2017 multipliers sourced from IMPLAN were the most recently available at the time of the analysis (Winter 2020).

This report analyzes three levels of impact that the proposed Facility may have on the economy:

- On-site labor impacts: These are the direct impacts experienced by the companies/individuals residing in New York and Greene County engaged in the onsite construction and operation of the Facility. These values represent expenditure of dollars on labor (wages, salaries and associated expenses) by Facility onsite construction personnel as well as operation and maintenance (O&M) personnel. On-site labor impacts do not reflect material expenditures. Most other input-output models consider this level as "direct impacts," referring to changes in jobs, economic activity and earnings associated with the immediate impacts created by the investment, which would include the equipment and materials installed onsite. However, the immediate economic impacts of the physical items used onsite, normally included in direct impacts, typically occur at some geographic distance from the project itself. Because of JEDI's focus on the local impacts of a facility, only the labor associated with the on-site location of the facility (Construction, Construction-Related Services and Onsite Labor during Operational Years) is counted at this level.
- Module and supply chain impacts: These impacts measure the estimated increase in demand for goods and services in industry sectors that supply or otherwise support the companies engaged in construction and operation (also known as "backward-linked" industries). These measures account for the demand for goods and services such as PV panel components, project analysis, legal services, financing, insurance, etc. Most other input-output models consider this level as "indirect impacts," referring to economic impacts associated with linked sectors in the economy that are upstream of the direct impacts, such as suppliers of hardware used to make the

equipment and materials installed. However, because of JEDI's focus on the local impacts of the facility, labor for components of this facility (e.g., PV panel manufacturers) occurring at off-site locations within Greene County

and/or New York State is also counted in this level as a module and supply chain impact.

Induced impacts: Induced impacts measure the estimated effect of increased household spending resulting from the project. Induced impacts reflect the reinvestment of earned wages, as measured throughout the first two levels

of economic impact. This reinvestment can occur anywhere throughout the local, regional, or state economy on

household goods, entertainment, food, clothing, transportation, etc.

Each of these three levels of impact can be estimated in terms of three indicators: jobs (as expressed through the

increase in employment demand), the amount of money earned through those jobs, and the overall economic output

associated with each level of economic impact. These indicators are described in further detail:

Jobs: Jobs refer to the increase in employment demand because of facility development. These positions are

measured across each level of impact, so that they capture the estimated number of jobs on-site, in supporting

industries, and in the businesses that benefit from household spending. For the purposes of this analysis, this term

refers to the total number of year-long full-time equivalent (FTE) positions created by the facility. Persons employed

for less than full time or less than a full year are included in this total, each representing a fraction of an FTE

position (e.g., a half-time, year-round position is 0.5 FTE).

Earnings: This measures the wages and salary compensation paid to the employees described above.

Output: Output refers to the value of industry production in the county and/or state economy, across all appropriate

sectors, associated with each level of impact. For the manufacturing sector, output is calculated by total sales plus

or minus changes in inventory. For the retail sector, output is equal to gross profit margin. For the service sector,

it is equal to sales volume. For example, output would include the profits incurred by those businesses that sell

electrical transmission line, concrete, or motor vehicle fuel to the Applicant.

Using the JEDI model to calculate the number of jobs and economic output from a proposed facility is a two-step

process. The first step requires facility-specific data inputs (such as year of construction, size of facility, and location).

For purposes of this economic analysis using the JEDI model, the Applicant has assumed the following general inputs:

Project Location: Greene County, New York

State

Year of Construction: 2021

System Application: Utility-Scale

Cell/Module Material: Crystalline Silicon

System Tracking: Fixed Mount

Average System Size4: 140 MWdc

Number of Systems Installed: 1

Total Project Size: 140 MWdc

Money Value (Dollar Year): 2020

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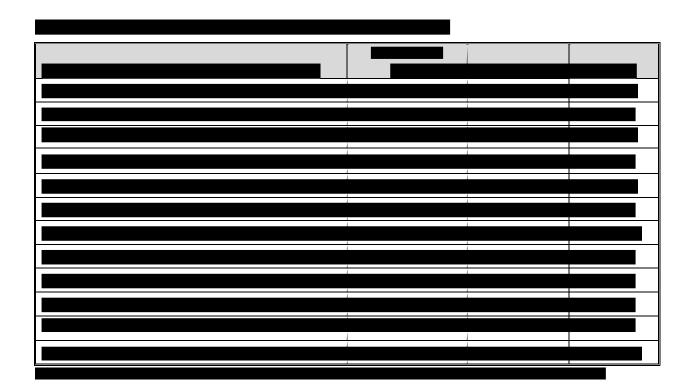
⁴ The solar photovoltaic JEDI model has the option to accommodate multiple facilities (i.e., "systems"), if needed. This analysis uses it for modeling a single facility ("System" according to the JEDI model); therefore, the average and total size is the same.

Using facility-specific data, the JEDI model then creates a list of more specific default values, which include default project cost values, default tax values, and default local share of spending values. These specific default values are derived from 10 years of research by NREL, and come from various sources, including interviews and surveys of leading project owners, developers, engineering and design firms, and construction firms active in the solar energy sector. The second step of the JEDI model methodology requires the review, and if warranted, the customization of all default values to more reasonable estimates. In this case, the Applicant reviewed the default project cost values, statewide shares, and countywide shares subtotaled by each of the following categories in the JEDI model and adjusted the value, where applicable, to a value more aligned with this specific Facility: Materials and Equipment during Installation (i.e., Construction), Labor during Installation (i.e., Construction), Other Costs during Installation (e.g., permitting, land acquisition, pre-development costs, and overhead during Construction), Labor during O&M, Materials and Services during O&M, Debt Financing, Tax Parameters, and Payroll Parameters. The Applicant then made specific adjustments to improve accuracy (see Tables 27-6 and 27-7). Note that although the Applicant originally estimated a lower number of construction workers in its New York State Energy Research and Development Authority (NYSERDA) application, the analysis presented here is based on more precise current budget estimates. To be conservative, this socioeconomic analysis also assumes less MW-DC installed (140MWdc) than shown in Exhibit 11 and Appendix 11-A (Preliminary Design Drawings). This assumption ensures more conservative job and economic impact estimates.

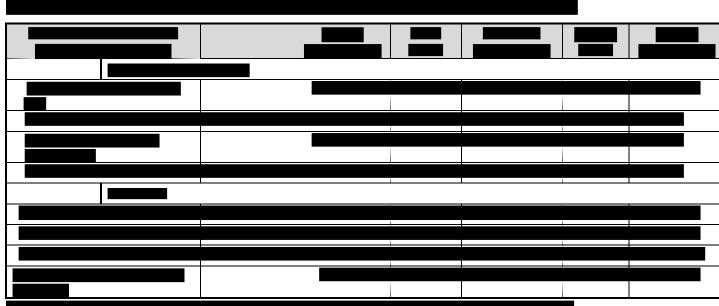
For this Facility, the Applicant assumed two cost scenarios (high estimates and low estimates) to calculate a set of high and low ranges in JEDI model results. This effort follows Stipulations 27.2(c) and 27.2(e). The High Scenario presumes that tracking technology is used, while the Low Scenario assumes a fixed mount system. The High Scenario also presumes a significant price inflation in the general economy and equipment prices (due to the expiry of tax credits and aggressive renewable targets), while the Low Scenario assumes no escalation in the costs of PV-related equipment and no inflation across the economy in general. Finally, the High Scenario presumes higher local sourcing from Greene County and New York State, while the Low Scenario presumes a lower amount of local sourcing. For an overview of these costs see Tables 27-6 and 27-7. More specific non-payroll costs are presented in Tables 27-8 and 27-9.

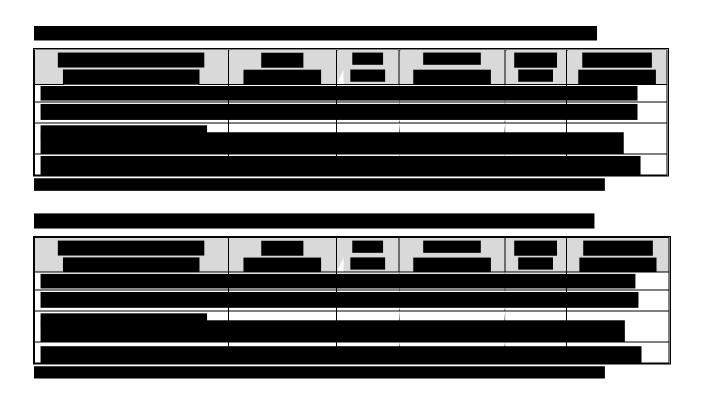
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Summary Results of Jobs and Economic Impact Analysis

This analysis utilized the most recent IMPLAN multiplier data that was readily available for both New York State (2017) and Greene County (2017) to estimate potential impacts on a statewide and countywide basis. The results of this analysis, estimated for both the construction and operation phases of the proposed Facility, are presented in Tables 27-12 and 27-13 and described in the narrative that follows.

Table 27-12. Summary of Estimated Range of Results of Statewide Jobs and Economic Impact Analysis

	Jo	bs	Earnings	(Millions)	Output	(Millions)
	Low Estimates	High Estimates	Low Estimates	High Estimates	Low Estimates	High Estimates
Construction						
Project Development and Onsite Labor Total	284	362	\$25.2	\$34.8	\$27.0	\$37.2
Construction & Installation Labor	214	268	\$18.0	\$25.0	-	-
Construction-Related Services	70	95	\$7.2	\$9.8	-	-
Module & Supply Chain Impacts	116	182	\$9.4	\$14.9	\$23.3	\$39.1
Induced Impacts	90	132	\$6.7	\$9.7	\$17.6	\$25.6
Total Impacts	490	676	\$41.3	\$59.4	\$67.9	\$102.0
Annual Operation						
Onsite Labor Impacts	1	2	\$0.2	\$0.3	\$0.2	\$0.3
Module & Supply Chain Impacts	3	6	\$0.3	\$0.5	\$0.8	\$1.4
Induced Impacts	6	10	\$0.5	\$0.7	\$1.3	\$2.0
Total Impacts	11	17	\$1.0	\$1.6	\$2.3	\$3.6

Notes: Earnings and Output values are millions of dollars in 2020 dollars. Construction and operating period jobs are full-time equivalent for one year (1 FTE= 2,080 hours). Economic impacts "During operating years" represent impacts that occur from system/plant operations/ expenditures. Totals may not add up due to independent rounding.

Source: Jobs and Economic Development Impact Model (USDOE NREL, 2016); Cost values verified by the Applicant in April 2020.

Table 27-13. Summary of Estimated Range of Results of Countywide Jobs and Economic Impact Analysis

	Jo	bs	Earnings	Earnings (Millions)		Millions)
	Low Estimates	High Estimates	Low Estimates	High Estimates	Low Estimates	High Estimates
Construction						
Project Development and Onsite Labor Total	36	111	\$2.4	\$8.6	\$2.8	\$9.5
Construction & Installation Labor	24	80	\$2.0	\$7.5	-	-
Construction-Related Services	12	30	\$0.4	\$1.1	-	-
Module & Supply Chain Impacts	13	45	\$0.8	\$2.8	\$1.8	\$8.7
Induced Impacts	5	18	\$0.2	\$0.8	\$0.8	\$2.8
Total Impacts	54	174	\$3.4	\$12.2	\$5.5	\$21.0
Annual Operation						
Onsite Labor Impacts	1	2	\$0.08	\$0.1	\$0.08	\$0.1
Module & Supply Chain Impacts	1	1	\$0.03	\$0.04	\$0.1	\$0.2
Induced Impacts	2	2	\$0.1	\$0.1	\$0.3	\$0.4
Total Impacts	4	5	\$0.2	\$0.3	\$0.5	\$0.7

Notes: Earnings and Output values are millions of dollars in 2020 dollars. Construction and operating period jobs are full-time equivalent for one year (1 FTE= 2,080 hours). Economic impacts "During operating years" represent impacts that occur from system/ plant operations/ expenditures. Totals may not add up due to independent rounding.

Source: Jobs and Economic Development Impact Model (USDOE NREL, 2016); Cost values verified by the Applicant in April 2020.

(a) Construction Workforce

Based upon JEDI model computations, it is anticipated that construction of the proposed Facility (estimated to last approximately 18 months) will generate employment of an estimated 284 to 362 FTE onsite Project Development and onsite Labor positions for New York residents, 214 to 268 of which will be for Construction and Installation Labor and 70 to 95 of which will be Construction-Related Services (engineers and other professional services). At the county level, the Facility is estimated to generate employment of an estimated 36 to 111 FTE onsite Project Development and onsite Labor positions for County residents, 24 to 80 of which will be for Construction and Installation labor and 12 to 30 will be Construction-Related Services. The numbers calculated by the JEDI model may appear higher than anticipated, which likely can be explained by how services provided by firms in the County are categorized.⁷

The Applicant's construction management team has further evaluated the estimated peak job numbers to be 428 to 535 FTE statewide construction jobs (including construction and Installation labor) and 48 to 161 FTE countywide construction jobs (including construction and Installation labor). These jobs are distributed across various disciplines. The estimated distribution of the average work force, by discipline, for each quarter during the construction year 2021 is summarized in Tables 27-14 and 27-15.

⁷ In the Solar PV JEDI model, construction-related service jobs are derived using the IMPLAN multipliers, which are averages for construction-related service industries, including non-solar construction-related service industries.

Table 27-14. Estimated Quarterly Statewide Labor Averages

Quarterly Period		Installation Labor rage FTE Jobs	Construction-Related Services (Engineers and Other Professional Services) Quarterly Average FTE Jobs		
	Low Estimates	ow Estimates High Estimates Low E		High Estimates	
Jul-Sep 2021	2	2	25	42	
Oct-Dec 2021	6	7	44	61	
Jan-Mar 2022	25	28	46	65	
Apr-Jun 2022	192	254	48	63	
Jul-Sep 2022	334	503	58	83	
Oct-Dec 2022	254 267		58	72	
Jan-Mar 2023	43	44	18	22	

Source: Jobs and Economic Development Impact Model (USDOE NREL, 2016); Quarterly Averages verified by the Applicant in May 2020.

Table 27-15. Estimated Quarterly Countywide Labor Averages

Quarterly Period		Installation Labor rage FTE Jobs	Construction-Related Services (Engineers and Other Professional Services) Quarterly Average FTE Jobs		
	Low Estimates High Estimates		Low Estimates	High Estimates	
Jul-Sep 2021	0	2	3	8	
Oct-Dec 2021	2	23	7	23	
Jan-Mar 2022	9	30	14	30	
Apr-Jun 2022	27	77	12	22	
Jul-Sep 2022	32	103	8	19	
Oct-Dec 2022	23 88		7	19	
Jan-Mar 2023	2	23	1	7	

Source: Jobs and Economic Development Impact Model (USDOE NREL, 2016); Quarterly Averages verified by the Applicant in May 2020.

(b) Construction Payroll

 an increase in their earnings, which is subsequently used to purchase local goods and services, creating a ripple effect throughout Greene County and the State.

The Applicant has determined that wages for the onsite construction jobs will average approximately **<BEGIN CONFIDENTIAL INFORMATION/>** . **</END CONFIDENTIAL INFORMATION>** Local, regional, and statewide employment during the construction phase will primarily benefit those in the construction trades, including equipment operators, truck drivers, laborers, and electricians. Facility construction will also require workers with specialized skills, such as crane operators, solar energy facility assemblers, specialized excavators, and high voltage electrical workers. It is anticipated that many of the highly specialized workers will come from outside Greene County and will remain only for the duration of construction.

Table 27-16. Estimated Annual Earnings by Trade Statewide During Construction Period (in \$ Millions)

	Project Development and Onsite Labor Earnings		Module & Supply Chain Earnings		Induced Earnings	
	Low Estimates	High Estimates	Low Estimates	High Estimates	Low Estimates	High Estimates
Construction/Installations – Non-Residential	\$18.0	\$25.0	\$1.8	\$2.5	\$2.6	\$3.7
Fabricated Metals	\$0.0	\$0.0	\$0.7	\$1.9	\$0.2	\$0.5
Electrical Equipment	\$0.0	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0
Energy Wire Manufacturing	\$0.0	\$0.0	\$0.3	\$1.0	\$0.1	\$0.3
Wholesale Trade	\$0.0	\$0.0	\$1.2	\$2.1	\$0.3	\$0.6
Retail Trade	\$0.0	\$0.0	\$0.2	\$0.5	\$0.1	\$0.1
Transport., Communication & Utilities	\$0.0	\$0.0	\$0.1	\$0.2	\$0.0	\$0.1
Office Services	\$7.2	\$9.7	\$0.7	\$0.9	\$2.1	\$2.9
Architectural and Engineering Services	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0
Other Services	\$0.0	\$0.0	\$4.1	\$5.6	\$1.1	\$1.5
Government	\$0.0	\$0.0	\$0.2	\$0.2	\$0.0	\$0.1
Total	\$25.2	\$34.8	\$9.4	\$14.9	\$6.7	\$9.7

Source: Jobs and Economic Development Impact Model (USDOE NREL, 2016)

Note: Earnings are independently rounded, and therefore may not add up directly to the integers shown in this table. Total earnings during the Project Development and Construction Phase for Office Services may end up lower than that predicted by JEDI Model, but that may be offset by Architectural and Engineering Services earnings being higher than what the JEDI Model estimates.

Table 27-17. Estimated Annual Earnings by Trade Countywide During Construction Period (in \$ Millions)

	Project Development and Onsite Labor Earnings		Module & Supply Chain Earnings		Induced Earnings	
	Low Estimates	High Estimates	Low Estimates	High Estimates	Low Estimates	High Estimates
Construction/Installations – Non-Residential	\$2.0	\$7.5	\$0.1	\$0.5	\$0.1	\$0.4
Fabricated Metals	\$0.0	\$0.0	\$0.1	\$0.7	\$0.0	\$0.1
Electrical Equipment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Energy Wire Manufacturing	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Wholesale Trade	\$0.0	\$0.0	\$0.1	\$0.6	\$0.0	\$0.1
Retail Trade	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$0.0
Transport., Communication & Utilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Office Services	\$0.4	\$1.0	\$0.0	\$0.1	\$0.1	\$0.1
Architectural and Engineering Services	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0
Other Services	\$0.0	\$0.0	\$0.2	\$0.6	\$0.0	\$0.1
Government	\$0.0	\$0.0	\$0.2	\$0.2	\$0.0	\$0.0
Total	\$2.4	\$8.6	\$0.8	\$2.8	\$0.2	\$0.8

Source: Jobs and Economic Development Impact Model (USDOE NREL, 2016)

Note: Earnings are independently rounded, and therefore may not add up directly to the integers shown in this table.

(c) Range of Secondary Employment and Economic Activity Generated by Facility Construction

As estimated by the JEDI model, solar facility manufacturing and supply chain industries could generate between 116 and 182 secondary jobs (with a total between \$9.4 to \$14.9 million in earnings) in New York State and between 13 and 45 jobs (with a total between \$0.8 and \$2.8 million in earnings) in Greene County over the course of Facility construction. In addition, Facility construction could induce demand for between 90 and 132 jobs (with a total between \$6.7 and \$9.7 million in earnings) statewide and between 5 and 18 jobs (with a total between \$0.2 and \$0.8 million in earnings) countywide through the spending of additional household income.

In addition to jobs and earnings, the construction of the Facility is expected to have a positive impact on statewide economic output, a measure of the value of goods and services produced and sold by backward-linked industries. As described in the definition above, output provides a general measurement of the amount of profit earned by manufacturers, retailers, and service providers connected to a given project. The value of economic output associated with Facility construction is estimated to be between \$67.9 and \$102.0 million statewide and between \$5.5 and \$21.0 million countywide. Between workers' additional household income and industries' increased production, the impacts associated with the Facility are likely to be experienced throughout many different sectors and regions of the statewide economy.

In addition to the economic benefits of Facility-related jobs and economic output, construction of the Facility also will also result in the direct payment to local landowners in association with the purchase of land to host facility components. These land purchases will offer direct benefits to landowners. As indicated above, the Applicant has estimated these payments to be \$15 million. These lease and easement payments will have a positive impact on the region to the extent that landowners spend their revenue locally.

(d) Workforce, Payroll, and Expenditures during Facility Operation

Based upon JEDI model computations, the operation and maintenance of the proposed Facility is estimated to generate between 1 and 2 full-time jobs for New York residents with combined estimated annual earnings of approximately \$0.2 to \$0.3 million (45.6% of which would be for employee payroll overhead expenses such as health insurance, social security, etc.). Greene County residents are anticipated to hold these onsite operational jobs. The operation and maintenance-related long-term jobs are expected to directly utilize the local Green County labor pool. These 1 to 2 positions have been verified as reasonable by the Applicant based on actual job numbers at other facilities and are anticipated to be comprised of technician positions. These 1 to 2 full-time local jobs generated by the solar energy Facility comprise the Facility's onsite long-term employment impact.

(e) Range of Secondary Employment and Economic Activity Generated by Facility Operation

Operation and maintenance should also generate new jobs in other sectors of the statewide economy through secondary employment, consisting of local revenue and supply chain impacts and the expenditure of new and/or increased household earnings. In total, while in operation, the Facility is estimated to generate a secondary employment demand between 9 and 16 jobs statewide with approximate annual earnings between \$0.8 and \$1.2 million. An estimated 3 jobs of these jobs will be held by county residents with approximate annual earnings between \$0.13 and \$0.14 million. This secondary employment is estimated to have an economic output between \$2.1 and \$3.4 million annually statewide and between \$0.4 and \$0.6 million annually countywide. Total economic output is projected to increase by an estimated \$2.3 to \$3.6 million statewide and \$0.5 to \$0.7 million countywide as a result of Facility operation and maintenance (see Tables 27-12 and 27-13).

Thus, the local economy will experience a positive increase in jobs, earnings, and local economic activity during the operational years of the Facility.

(f) Incremental School District Operating and Infrastructure Costs

The Facility is not expected to result in any additional operating or infrastructure costs to the local school district. Although it is possible that the long-term Facility operation employees may have school-aged children, increases in

school district services and expenditures would likely be recovered through those employees' property tax payments and the respective district's state aid. Moreover, the affected school districts will receive a considerable share of the PILOT Agreement payments. These payments will more than offset any possible increase in expenses incurred by the districts because of Facility employee children entering the school district.

(g) Incremental Municipal, Public Authority, or Utility Operating and Infrastructure Costs

The Flint Mine Solar Facility will place little demand on municipal services. Moreover, added demand will be offset by local payments in the form of taxes (e.g., fire district taxes), and thus the Facility will most likely have no direct impact on municipal expenses. As a preliminary matter, solar facilities do not require municipal water, sewer, or solid waste disposal services.

With respect to police services, as part of Exhibit 18, the Applicant has committed to developing and implementing security measures, including security lighting, fencing, locked gates, signage and other measures designed to restrict site access and deter trespassers during construction and operation of the Facility. The Applicant also will implement an Emergency and Fire Response Plan (E&FRP) that includes measures for responding to various emergencies, including those that could potentially involve the police. These measures, taken together, will limit the need for the Facility to utilize municipal police services.

With respect to fire, as previously noted, the annual revenues from the Facility's fire district taxes to the Towns of Coxsackie and Athens Fire Districts will be available to cover any costs.

With respect to emergency medical response, local emergency medical services may be called upon to respond to medical emergencies common to construction projects generally. In the event of any situation involving a medical, natural, or security emergency, Project staff and/or subcontractors will call 911 and inform local first responders. First responders will evaluate the situation and help facilitate the correct courses of action. Utilization of local emergency medical services could occur during the construction phase, with the resulting expenses. As previously noted, once the Facility is operational, maintenance will require only one or two employees. Given the small number of employees required to operate and maintain the Facility, the potential financial burden on the Towns of providing emergency medical services during the operation phase of the Facility is expected to be small.

Because transportation of major Facility components during construction could potentially impact certain roadways, the Applicant will be discussing the possible need for a Road Use Agreement (RUA) with Greene County and the Towns of Athens and Coxsackie after the Article 10 Application is submitted that could potentially require the Applicant to restore any roadways impacted by the transportation of Facility components during construction and operation of

the Facility. Even if a RUA is not put in place, the cost of repairs to public roads associated with the Project is not anticipated to be material. The Facility will not result in the construction or operation of public highway or road infrastructure and will not result in unnecessary sprawl; construction and operation of the Facility also will not require the use of significant numbers of oversize/overweight vehicles that could potentially damage roads. However, there are crossings and entrances planned for some Town and County roads, and approvals from the New York State Department of Transportation (NYSDOT) may be required to allow Facility components to cross state highways (e.g., State Route 9W).

Although personnel involved with the operation of the Facility may elect to live in the towns in which the Facility is located (if they are not already resident there), the impact of these employees and their families on town services will be negligible. Moreover, any marginal increase in services is expected to be recovered through the employees' property tax payments.

(h) Jurisdictions that Will Collect Taxes or Benefits

The Facility is anticipated to result in economic benefits for the following taxing jurisdictions and special tax districts:

- Greene County
- Town of Coxsackie
- Town of Athens
- Coxsackie-Athens Central School District

- West Athens-Limestreet Fire Company
- Coxsackie Hose Fire Company #3
- Coxsackie Library
- Athens Library

(i) Incremental Amount of Annual Taxes or Payments

In exchange for a real property tax exemption, the Applicant expects to execute a payment-in-lieu of tax agreement, which will require annual PILOT payments to each taxing jurisdiction identified in Table 27-18 for the next 40 years. Taxing jurisdictions receiving various forms of payments include Greene County, Towns of Coxsackie and Athens, and the Coxsackie-Athens Central School District. Although the terms of the PILOT Agreement have not been negotiated, like other solar projects in New York, the Applicant plans to enter a PILOT with an estimated total annual payment rate of \$5,000/MWac installed during the term of the PILOT. Over the expected 40-year term of the PILOT and based on the 100 MWac nameplate capacity, the estimated annual PILOT amount would total \$500,000 per year, compounding 2% annually. Table 27-15 summarizes the estimated PILOT payments projected to be made to each taxing jurisdiction based on the Applicant's internal estimates using each municipality's share of combined tax rates and the share of the Facility's nameplate capacity in individual jurisdictions. Within the \$5,000/MWac PILOT estimate, the Applicant expects \$1,000/MWac of that rate to be allocated to a Host Community Agreement with the host municipalities (Towns of Coxsackie and Athens and Coxsackie-Athens Central School District). An estimated additional \$100,000 in total annual HCA payments is expected to be distributed between with the two towns and school district.

Table 27-18. Estimated Annual and Total PILOT and HCA Amounts

Taxing Jurisdictions Receiving PILOTs	Annual PILOT and HCA Estimate	40-Year PILOT and HCA Estimate		
and HCAs	for Year 1	(Nominal Dollars)		
Greene County	\$95,000	\$5,738,188		
Town of Coxsackie	\$90,200	\$5,448,259		
Town of Athens	\$69,800	\$4,216,058		
Coxsackie-Athens Central School District	\$345,000	\$20,838,684		
Facility Total	\$600,000	\$36,241,190		

Notes: All values in this table are independently rounded, and therefore may not directly add up to the totals shown. All calculations utilized unrounded values. Annual nameplate capacity within jurisdictions is calculated by aggregating the installed capacity per parcel within each jurisdiction. The 40-Year PILOT total estimate was calculated using a compounded annual escalation rate of 2%.

As reflected in Table 27-18, over the span of the 40-year PILOT Agreement, an estimated total of \$36,241,190 will be paid to the local taxing jurisdictions. Upon expiration of the PILOT Agreement, tax payments will be dependent upon the assessment of the Facility's taxable assets at that time.

Special tax jurisdictions also will collect taxes or benefits from construction and operation of the Facility, including fire services, emergency medical services and libraries. Aside from the PILOT Agreement and HCAs, the Applicant expects additional payments will be made to local municipalities, including special district taxes (fire and library taxes). These taxes are estimated to range between \$192,257 and \$243,585 annually, depending on the assessed value of the Facility. These payments will last for the duration of the 40-year expected lifespan of the Facility. Additional details about incremental annual payments are provided in the sub-sections that follow:

(1) New York State Real Property Tax Law § 487

The Applicant plans to negotiate a PILOT Agreement through the Greene County Industrial Development Agency (IDA), and therefore, the New York State Real Property Tax Law § 487 negotiation process is not applicable. The Greene County IDA would be expected to receive an upfront fee and may seek to secure an ongoing administrative fee from the total annual PILOT payment.

(2) Use of PILOT payments

As stated above, in exchange for a real property tax exemption, the Applicant seeks to execute a PILOT Agreement. Such agreements typically require annual PILOT payments to be paid to the taxing jurisdictions in the same ratio as regular property tax payments. In the case of the Facility, each taxing jurisdiction is identified in Table 27-18 and for the purposes of this Exhibit it is assumed that the same level of revenue will continue for the next 40 years. The municipalities receiving PILOT payments may use the funds for any appropriate purpose of their choosing in accordance with their charter. In addition to the PILOT Agreement,

the Applicant expects to enter an HCA with the Towns and school district, which will provide additional revenue. The HCA payments also may be used for any purpose consistent with the municipality's charter.

(3) PILOT negotiations

PILOT negotiations are expected to take place with the Greene County IDA, who will be negotiating on behalf of Greene County, the Towns of Coxsackie and Athens, and the Coxsackie-Athens Central School District.

(4) Models for establishing value of properties with utility scale solar arrays

Pursuant to the Siting Board's recent ruling stating that neither Article 10 nor the implementing regulations require an assessment of the impact of utility scale renewable energy projects on local property values as part of the Article 10 review process, a comparative evaluation of property assessment models is not included and should not be considered in this case. However, a review of the literature concerning the potential impact of solar facilities on property values is set forth in Section (8) below.

(5) Potential impacts on sales tax revenue

Pursuant to the PILOT Agreement expected to be negotiated with the Greene County IDA, the construction and operation of the Facility would be exempt from sales tax. However, that exemption does not include sales tax associated with increased local spending resulting from Facility laborers and technicians (e.g., food sales, lodging, and other purchases). An estimate of the sales tax associated with local spending was incorporated into the JEDI model and therefore is represented in the results of this socioeconomic analysis.

(6) Role of Greene IDA in PILOT negotiations

It is expected that the Greene County IDA would negotiate the PILOT in communication with the taxing jurisdictions. Although typical IDA fees range from 0.75% to 1.0% of the total cost of a project developed by an IDA, in this case, the cost and risk of developing the Facility has been born by the Applicant, as will the financing and construction costs. As a result, it is anticipated that the IDA fee will not exceed 0.5% of the Facility construction cost.

(7) Analysis and calculation of the additional taxes and prior property tax recoupment for properties currently receiving agricultural exemptions

In New York State, there are a variety of programs that work together to protect farmland. For newly constructed or reconstructed agricultural structures, New York's Real Property Tax Law allows a ten-year property tax exemption. Once granted, the exemption continues automatically for ten years. The exemption

will terminate before the ten-year period if the building or structure ceases to be used for farming operations, or the building or structure or land is converted to a non-agricultural or non-horticultural use.

An additional opportunity for owners of farmland to protect their farmland is through agricultural assessments, where property owners receive reduced property tax bills for land in agricultural production by limiting the property tax assessment of such land to the value of their land for agricultural production, rather than its full development value. An agricultural assessment applies to school, country and town property taxes and is based on the soil types on the farm. Agricultural assessments are limited to land used in agricultural production, defined to include cropland, pasture, orchards, vineyards, sugarbush, support land, and crop acreage either set aside or retired under Federal supply management or soil conservation programs. Up to 50 acres of farm woodland is also eligible for an agricultural assessment per eligible tax parcel. Land and water used for aquaculture production are eligible, as is land under a structure within which crops, livestock or livestock products are produced. Land visibly associated with the owner's residence is ineligible.

After determining whether the parcel, or any part of it, is eligible for an agricultural assessment, the assessor calculates such assessment by multiplying the acreage in each soil group and farm woodland by the applicable agricultural assessment value. The sum of the values is multiplied by the municipality's most recent State equalization rate or special equalization rate. The resulting figure is the agricultural assessment for the eligible land in the parcel. This amount is compared to the assessed value of the eligible land. Any assessed value above the agricultural assessment is exempt from real property taxation. In other words, taxes on eligible farmland are based on the land's agricultural assessment rather than its full assessment.

If farmland that has received an agricultural assessment is converted to a nonagricultural use within five years of last receiving an agricultural assessment if located in an agricultural district and within eight years if located outside an agricultural district, a payment is imposed to recapture the taxes forgone for converting such land. Assessors determine whether a conversion has occurred based on the facts of each case. Conversion is defined as "an outward or affirmative act changing the use of agricultural land." Nonuse of the property (for example, abandoning land or leaving it idle) disqualifies such land from receiving an agricultural assessment, but is not considered a conversion.

In light of the above, the Applicant has calculated the amount of land expected to be converted to a nonagricultural use (solar) and therefore subject to either eight or five years of penalties and interest, as well as the amount of land estimated to be removed from the agricultural exemption but NOT subject to a penalty (i.e., it will be left idle but not used to site improvements).

Payments for the conversion of agricultural land to a nonagricultural use are added to the taxes levied upon the converted land. The property may be subject to a tax sale should such payment remain unpaid. Therefore, these payments generally become the responsibility of the owner of the land at the time of conversion. A payment for conversion will be equal to five times the taxes saved in the most recent year that the land received an agricultural assessment. In addition, 6% annual compounded interest rate will be added to the payment amount for each year that the land received an agricultural assessment, not exceeding five years. When only a portion of a parcel is converted, the assessor apportions the assessment and the agricultural assessment and determines the tax savings attributable to the converted portion.

For the Project, the payment for the portion of the lands to be converted to non-agricultural use is estimated to be approximately \$9,000 to be paid to taxing jurisdictions (not accounting for inflation between the date of this Application and the date of conversion). This calculation is derived from the estimated land area to be used for solar (adding 20% for buffer areas etc.) and the area to be left idle from the land leased or purchased by the Applicant. This calculation for increases in school and county taxes assumes that none of the land will be non-taxable in the future (i.e., for the purposes of these calculations it has been assumed that the land will not be owned by a not-for-profit or otherwise not be subject to property and school tax).

(8) Potential impacts on adjacent landowners and residences

Pursuant to the Siting Board's recent ruling stating that neither Article 10 nor the implementing regulations require an assessment of the impact of utility scale renewable energy projects on local property values as part of the Article 10 review process, a property value impact study is not included and should not be considered in this case. However, a full list of abutting landowners is provided in Appendix 27-A. Within the host community and nearby communities, property values are not anticipated to be impacted by the Project. More generally, research shows minimal impacts to property values from utility-scale solar facilities. Researchers from the University of Texas at Austin conducted a geospatial solar-siting analysis of 956 utility-scale solar sites completed in 2016 or earlier throughout the nation to determine the impacts of solar facilities on communities of varying densities and housing stock (Al-Hammoodah et al. 2018). To determine the scale and the direction of potential impacts on home prices, property assessors were surveyed from 37 counties across the nation, each having one or more utility-scale solar projects. Geospatial findings suggest that, due to the rural nature of most solar facilities, relatively few homes tend to be located within distance enough to be potentially impacted by visibility, something that is also the case with this Facility. Meanwhile, most assessors surveyed believed that proximity to solar installations have either no impact or a positive impact on home values in general. Detailed analyses showed that most survey respondents did not perceive an impact of solar

facilities to properties. Some assessors perceived that solar installations may have positive impacts to property values, such as when trees or other vegetation screens were planted or when the land hosting the solar facilities had a previously unappealing use (Al-Hammoodah et al. 2018).

Finally, in alignment with the findings of this recent large-scale analysis, several site-specific property value impact studies have been published recently. These studies include paired sales analyses conducted for utility-scale solar facilities in North Carolina (Kirkland 2018), for nine existing solar facilities throughout the Midwest (CohnReznick 2018a) and five solar facilities in Illinois and Indiana (CohnReznick 2018b). These studies analyzed adjoining properties before and after the solar facility was developed (i.e., a matched pair analysis). Each study determined that no measurable impact and no consistent pattern of negative impacts occurred to adjacent properties that could be attributed to the proximity of adjacent solar facilities. In the North Carolina Study, this lack of impact applied to both occupied residential home values and vacant land values alike.

Numerous property value studies based on statistical analysis of real estate transactions have found that solar facilities do not have significant impact on property values (Hoen & Rand, 2018; National Association of Realtors, 2019; Kirkland, 2018; CohnReznick, 2018a; CohnReznick, 2018b). Given the results of these studies, it is reasonable to conclude that the proposed Facility will not have a significant adverse impact on local property values.

(9) Potential direct impact of Facility on local energy costs

A full discussion of energy pricing impacts is in Exhibit 8 of this Application. Economic impact analyses, such as the analysis presented in this Exhibit, typically assess regional economic indicators, such as employment, income, and economic output, that are anticipated from implementation of a project. The impact of the Facility on local or regional energy costs is not possible to quantify, as the energy generated by the Facility will be injected into the New York electrical transmission grid, as it is with every other energy generating facility in the State. The energy produced by the proposed Facility cannot be tracked once it enters the transmission system. A significant proportion of the price of electricity in New York State is determined by hour-ahead and day-ahead auctions conducted by the New York Independent System Operator (NYISO). The presence of renewable energy projects in the NYISO auctions tends to put downward pressure on the market clearing price for that NYISO zonal energy price. Since renewable energy projects like the Facility must sell their electric output into the NYISO wholesale market (that is, if they are under contract to sell their Renewable Energy Credits, or "RECs", to NYSERDA), doing so places downward pressure on overall prices since the marginal costs of renewable energy production are close to zero. The combined effect of numerous

renewable energy projects like the Facility will be to reduce the zonal marginal cost of electricity once those facilities are operating through a phenomenon known as price suppression. The impact of this price suppression may be significant enough to offset for ratepayers the direct cost of NYSERDA's purchase of the RECs on a unit basis. Furthermore, if renewable energy facilities, such as Flint Mine Solar, continue to generate beyond the 20-year term of the NYSERDA REC contract, it is probable that in the long-term, the operation of these facilities will cause a net reduction of wholesale electric prices.

(j) Comparison of Incremental Fiscal Costs and Incremental Fiscal Benefits

As indicated above, if the Facility does result in any additional fiscal costs to local tax jurisdictions, they will be minimal. Meanwhile the Facility will result in significant fiscal benefits through implementation of a PILOT Agreement and HCA, as well as the payment of significant sums annually (i.e., in excess of \$200,000 per year) in special district taxes benefitting fire departments and libraries.

(k) Equipment or Training Deficiencies in Local Emergency Response Capacity

Exhibit 18, along with the Preliminary E&FRP, provides specific details on the emergency equipment that the Applicant will keep on site to respond to a fire, medical or other emergency. These documents also contain fire and emergency responder training and communication plans that will address any training deficiencies. The Applicant is committed to working with the local fire departments to resolve any fire-related concerns and is coordinating with them to identify equipment the Applicant may furnish to the departments to augment existing firefighting capabilities.

The Applicant met with the Greene County Emergency Services Department, Coxsackie Hose Company #3 and the West Athens-Limestreet Fire Company and had numerous follow-up conversations, as described in more detail in Exhibit 2. The Applicant provided those stakeholders, as well as other local first responders (i.e., local police chiefs and municipal EMS providers) with a copy of the Preliminary E&FRP in November 2019. Feedback that was received during consultations is summarized in Exhibit 18. These agencies will also be provided with copies of the final E&FRP. The final E&FRP will include a list of all fire and emergency medical equipment that will be maintained at the Facility and describe the emergency response training provided to Facility personnel.

(I) Consistency with State Smart Growth Public Infrastructure Criteria

The New York Smart Growth Public Infrastructure Policy Act (hereinafter "Smart Growth Act") is meant to maximize the social, economic, and environmental benefits from public infrastructure development by minimizing the impacts associated with unnecessary sprawl. Under the Smart Growth Act, State infrastructure agencies, such as NYSDOT,

shall not approve, undertake, or finance a public infrastructure project, unless, to the extent practicable, the project is consistent with the smart growth criteria set forth in New York Environmental Conservation Law (ECL) § 6-0107.

Although the Facility will not result in the construction or operation of public highway or road infrastructure and will not result in unnecessary sprawl, approvals from the NYSDOT may be required to allow Facility components to cross state highways (e.g., State Route 9W). The Facility will also result in the investment of approximately \$15 million in System Upgrade Facilities to the 115kV electric system in the region. Therefore, this section provides a detailed statement regarding the Facility's consistency with the smart growth criteria in ECL § 6-0107(2). As discussed below, the Facility is consistent with six applicable criteria while the remaining four criteria do not apply to the Facility.

1) Criterion 1: To advance projects for the use, maintenance, or improvement of existing infrastructure

The purpose of the Facility is to create an economically viable solar-powered electrical-generating facility that will provide a source of renewable energy to the New York grid, and in doing so, improve the State's existing energy infrastructure. The Facility components include a solar field of PV modules producing direct current (DC) electricity; potentially battery energy storage systems (BESS) to store up to 4 hours of DC electricity; inverters placed throughout the Facility (internal to the PV arrays) to convert the DC electricity produced by the PV modules to alternating current (AC) electricity; a collection system that will aggregate the AC output from the inverters; access driveways, a Facility Substation and a Point of Interconnect (POI) Switchyard. While these Facility components, with the exception of the POI Switchyard, are not public infrastructure and are generally not expected to result in the utilization of public infrastructure, the Applicant's contract with NYSERDA proposes that the Facility will contribute an anticipated 175,000 MWhrs (with an allowance within the contract for an additional 20% to be produced for NYSERDA's benefit) of renewable energy to the New York grid annually. As reported by the Final Scoping Statement (September 2019), total net generation delivered to National Grid's existing LaFarge to Pleasant Valley 115 kV transmission line and the Feura Bush to North Catskill 115 kV transmission line is expected to generate enough electricity to exceed the amount consumed each year by all the households in Greene County. Additionally, the potential addition of BESS to store up to 4 hours of DC electricity would enable the Facility to "peak shift," or export maximum amount of energy into the grid during periods of high demand, historically 2pm-6pm, even though maximum collection occurs in the few hours around solar noon. Finally, while the Facility will use portions of existing State, County and Town highway infrastructure to transport equipment, none of these activities are anticipated to have any long-term impact on existing infrastructure.

After careful consideration of its contribution to and utilization of both the New York power grid and transportation routes identified above, it has been determined the Facility is consistent with this smart growth criterion.

Consequently, the necessary changes to the public infrastructure (contribution of renewable energy to power grid, utilization of existing transportation routes and construction of access road intersections to existing roads) are also consistent with the criterion.

2) Criterion 2: To advance projects located in municipal centers

"Municipal centers" are defined in the Smart Growth Act as "areas of concentrated and mixed land uses that serve as centers for various activities, including, but not limited to, central business districts, main streets, downtown areas, brownfield opportunity areas, downtown areas of local waterfront revitalization program areas, transit-oriented development, environmental justice areas, and hardship areas," as well as "areas adjacent to municipal centers, which have clearly defined borders, are designated for concentrated development in the future in a municipal or regional comprehensive plan, and exhibit strong land use, transportation, infrastructure and economic connections to a municipal center; and areas designated in a municipal or comprehensive plan, and appropriately zoned in a municipal zoning ordinance, as a future municipal center" (ECL § 6-0103)

Large-scale solar energy projects, such as the Facility, require extensive land; moreover, the requirement for interconnection to high-powered transmission lines restricts large-scale solar energy projects to comparatively isolated rural areas. Therefore, this criterion does not apply to the Facility.

3) Criterion 3: To advance projects in developed areas or areas designated for concentrated infill development in a municipally approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan

See discussion of Criterion 2 above. Large-scale solar energy projects such as the Facility cannot be located within areas designated for concentrated infill development, nor are they well-suited to developed waterfront areas and/or brownfield opportunity areas. Therefore, this criterion does not apply to the Facility.

4) Criterion 4: To protect, preserve and enhance the State's resources, including agricultural land, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and significant historic and archaeological resources

The operating Facility will generate approximately 175,000 MWhrs annually of renewable electricity without consuming cooling water, emitting pollutants or heat-trapping greenhouse gases, or contaminating water, ground or air resources though the extraction, transportation, consumption, and disposal of fossil fuels. The Facility Site

largely utilizes post-agricultural, underutilized or marginal lands to host components, and avoids Critical Environmental Areas and significant natural communities identified by the New York National Heritage Program. As described in Exhibit 9 and throughout this Article 10 Application, the layout of the Facility was designed through an iterative process that weighed the technical and economic requirements of the Facility against impacts to land use (see Exhibit 4), aesthetics (see Exhibit 24), cultural resources (see Exhibit 20), environmental/ecological resources (such as forests, wetlands, and sensitive wildlife habitat; see Exhibit 22), surface and groundwater (see Exhibit 23), and public health and safety (see Exhibits 15 and 18). Within the constraints of the permitting process and Facility Area, the Facility layout avoids or minimizes environmental impacts to the greatest extent practicable while allowing the Applicant to generate approximately 175,000 MWhrs annually of renewable energy in furtherance of the State's renewable energy goals. The Applicant has purposefully sited the Facility to avoid impacts to prime agricultural lands as described in Appendix 4-B and Exhibit 9. Furthermore, the Applicant has proposed a 320-acre grassland habitat conservation area to preserve and manage sensitive wildlife habitat for the life of the Facility that will include a recreational trail system that is open to the public, thereby providing an opportunity for public open space and recreation which is currently non-existent in the Facility Area. Additionally, the Applicant has been corresponding with the Southold Indian Museum to purchase lands for archaeological resource preservation in perpetuity. Based on the analyses of the resources listed above, the Applicant believes that the Facility has avoided and minimized impacts to these resources to the maximum extent practicable (based on the layout as currently proposed), and that any remaining impacts are outweighed by the benefit provided by the Facility's generation of approximately 175,000 MWhrs annually of clean, renewable energy. Therefore, the Facility is consistent with this criterion.

5) Criterion 5: To foster mixed land uses and compact development; downtown revitalization; brownfield redevelopment; the enhancement of beauty in public spaces; the diversity and affordability of housing in proximity to places of employment, recreation, and commercial development; and the integration of all income and age groups.

See response to Criterion 2. The Facility must necessarily be located in a rural area well removed from any areas that would potentially experience compact development, downtown revitalization, or significant quantities of housing, etc. (e.g., villages and cities). It is noted however, that there will be a new trail installed within the conservation area of the Facility. This will enhance the beauty of this public space as well as develop public access to recreation opportunities. Therefore, the Facility is consistent with this criterion.

6) Criterion 6: To provide mobility through transportation choices including improved public transportation and reduced automobile dependency

The Facility does not directly or indirectly affect transportation options. Therefore, this criterion is not applicable.

7) Criterion 7: To coordinate between state and local government and inter-municipal and regional planning

The Applicant has conducted extensive public outreach to local government and planning agencies throughout the development and review of the Facility. This has included the public outreach conducted in accordance with the requirements of the Article 10 process and the Public Involvement Program (PIP) plan prepared specifically for the Facility, which includes frequent stakeholder consultation and other forms of engagement, public education, public meetings, ample notification periods, and public comment periods at key milestones. The Applicant also has reached out individually to each of the local governments that will be directly affected by the Facility. Moreover, the Article 10 process specifically requires outreach and coordination between the Applicant and State agencies with a role in reviewing the Application for the proposed Facility. To the extent applicable, these outreach efforts and municipal/agency consultations satisfy the criterion related to coordination between State and local governments.

8) Criterion 8: To participate in community-based planning and collaboration

The Applicant team has conducted and will continue to conduct extensive public outreach to community-based organizations throughout the development and review of the Facility. This has included the public outreach conducted in accordance with the requirements of the PIP. See response to Criterion 7 for additional detail. These outreach efforts satisfy the criterion related to participation in community-based planning and collaboration.

9) Criterion 9: To ensure predictability in building and land use codes

The Applicant has no role in or authority over the development or enforcement of building or land use codes in the Towns of Coxsackie or Athens. Therefore, this criterion does not apply to this Facility.

10) Criterion 10: To promote sustainability by strengthening existing and creating new communities which reduce greenhouse gas emissions and do not compromise the needs of future generations by, among other means, encouraging broad-based public involvement in developing and implementing a community plan and ensuring the governance structure is adequate to sustain its implementation. The Facility is consistent with State policies designed to encourage initiatives that reduce greenhouse gas emissions and contribute to the transition of New York's energy markets by encouraging renewable alternatives. The Facility promotes the reduction of greenhouse gas emissions through the use of renewable energy.

As noted elsewhere in this Application, local landowners, neighbors and interested citizens formed an active local citizens group, the Friends of Flint Mine Solar, to advocate for the Facility and disseminate information about the benefits of solar to the community. Landowner members of the Friends of Flint Mine are motivated by a desire to see their land utilized in a sustainable and productive manner, but as long-term residents of the Greene County they also desire to share information about the benefits of PV solar and renewable energy in general and the Facility, in particular.

The Friends of Flint Mine have organized numerous public events targeting disparate audiences to bring the public and the Applicant together and educate the public about the Project and their interest in seeing it proceed. The events organized by the Friends of Flint Mine Solar (some of which the Applicant has been invited to participate in) include meetings with elected state, county and municipal representatives, local fire personnel, Coxsackie-Athens School Superintendent, NYSERDA and the Governor's energy representatives, the Coxsackie River Fest and Earth Day 2019, and Athens Street Fest 2019. The Friends have also engaged with community youth, through events like face-painting and an event focused on children organized at a local farm store in the spring of 2019.

The Applicant has also participated in events run by other organizations concerned about climate change, including Real Information about Solar Energy (RiSE), Mothers Out Front and New York Progressive Action Network (NYPAN) Greene, such as an open house run by these three organizations in 2019 and events held by these organizations to learn more about the proposed Facility. These and other community engagement activities are tracked in the Applicant's PIP Tracking Log and summarized in the Public Outreach Report (Appendix 2-B and 2-C).

As a result of consultation with these community organizations as well as with others such as interested neighbors and town residents, Scenic Hudson, Greene County IDA, the Archeological Conservancy and the Greene Land Trust, the Applicant has made changes to Facility designs and operating plans and has added or expanded/improved various conservation and preservation plans. Among the initiatives that the Applicant expects community and other organizations to be potentially involved in are operation of the proposed winter raptor habitat, ownership and conservation of Flint Mine Hill, and development of a trail north of Flint Mine Road that would allow the public to enjoy raptors foraging in the proposed grassland preserve and take in the views of the Catskills to the southwest. Other changes made by the Applicant in response to public feedback include avoiding installing

PV modules on Prime Farmland, relocating the POI switchyard and substation so they will be mostly hidden behind a tree-lined ridge, reducing the modules proposed for the fields adjacent to and along the west side of 9W, and establishing major setbacks from Flint Mine Road. Lastly, the Application was expanded to include information which responds to specific concerns or questions raised by community members during these engagement efforts.

The Facility, therefore, supports this smart growth criterion.

11) Smart Growth Attestation

The Smart Growth Act requires that the chief executive officer of a state infrastructure agency (or his or her designee) attest in writing that the project under review, to the extent practicable, meets the relevant smart growth criteria in ECL § 6-0107(2). As previously noted, the Facility will not result in the construction or operation of public infrastructure as that term is used in the Smart Growth Act. As a result, the requirement to obtain an attestation from the chief executive officer of a state infrastructure agency does not apply to the Facility.

(m) Work Papers Associated with Socio-Economic Impact Estimates

The Applicant will provide internal work papers associated with the socioeconomic impact estimates to the New York State Department of Public Service.

(n) Tracking and Reporting

Within 15 months of commercial operation, the Applicant will report the actual number of direct jobs created during the construction and operational phases of the Facility, as well as the tax payments made to local jurisdictions.

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